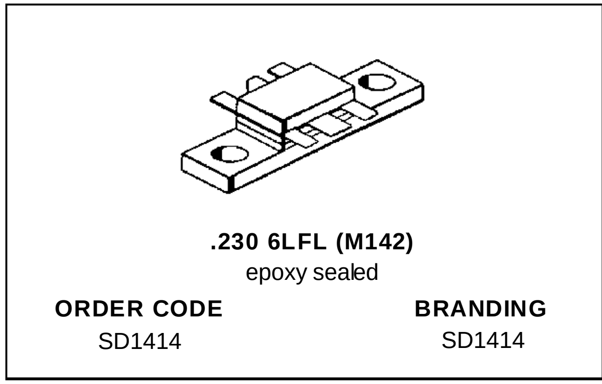


SD1414

RF & MICROWAVE TRANSISTORS 800-900 MHz APPLICATIONS

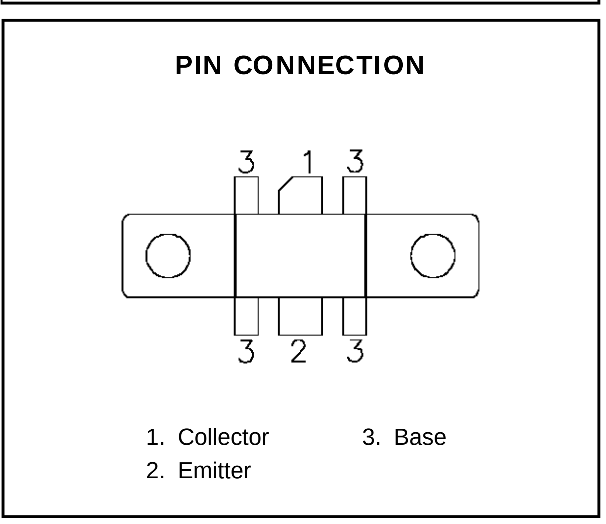
- 836 MHz
- 12.5 VOLTS
- COMMON BASE
- P_{OUT} = 45 W MIN. WITH 4.7 dB GAIN



.230 6LFL (M142)
epoxy sealed

ORDER CODE	BRANDING
SD1414	SD1414

PIN CONNECTION



1. Collector
2. Emitter
3. Base

DESCRIPTION

The SD1414 is a 12.5 V Class C epitaxial silicon NPN planar transistor designed for amplifier applications in the 806 - 866 MHz frequency range. Internal input matching and common base configuration assure optimum gain and efficiency across the entire frequency band. The SD1414 withstands infinite VSWR at rated power output.

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	36	V
V_{CEO}	Collector-Emitter Voltage	18	V
V_{CES}	Collector-Emitter Voltage	36	V
V_{EBO}	Emitter-Base Voltage	4.0	V
I_C	Device Current	9.0	A
P_{DISS}	Power Dissipation	150	W
T_J	Junction Temperature	+200	°C
T_{STG}	Storage Temperature	– 65 to +150	°C

THERMAL DATA

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	1.2	°C/W

ELECTRICAL SPECIFICATIONS (T_{case} = 25°C)

STATIC

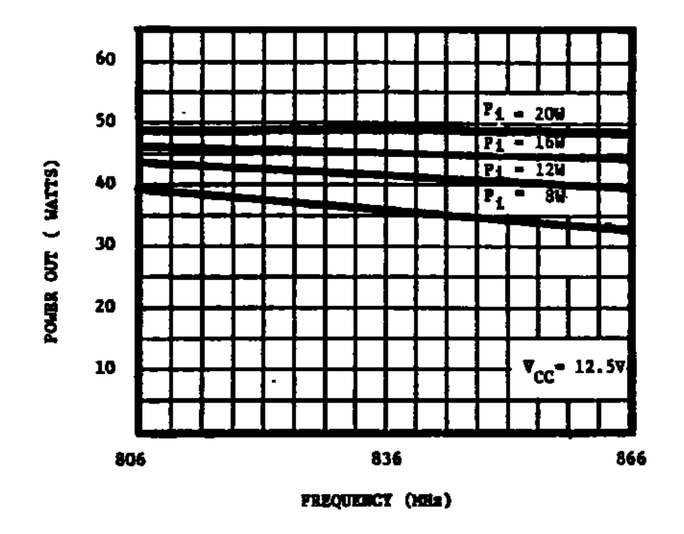
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CES}	I_C = 50mA	V_{BE} = 0V	36	—	—	V
BV_{CEO}	I_C = 50mA	I_B = 0mA	18	—	—	V
BV_{EBO}	I_E = 10mA	I_C = 0mA	4.0	—	—	V
I_{CBO}	V_{CB} = 15V	I_E = 0mA	—	—	5	mA
h_{FE}	V_{CE} = 5V	I_C = 1A	5	—	200	—

DYNAMIC

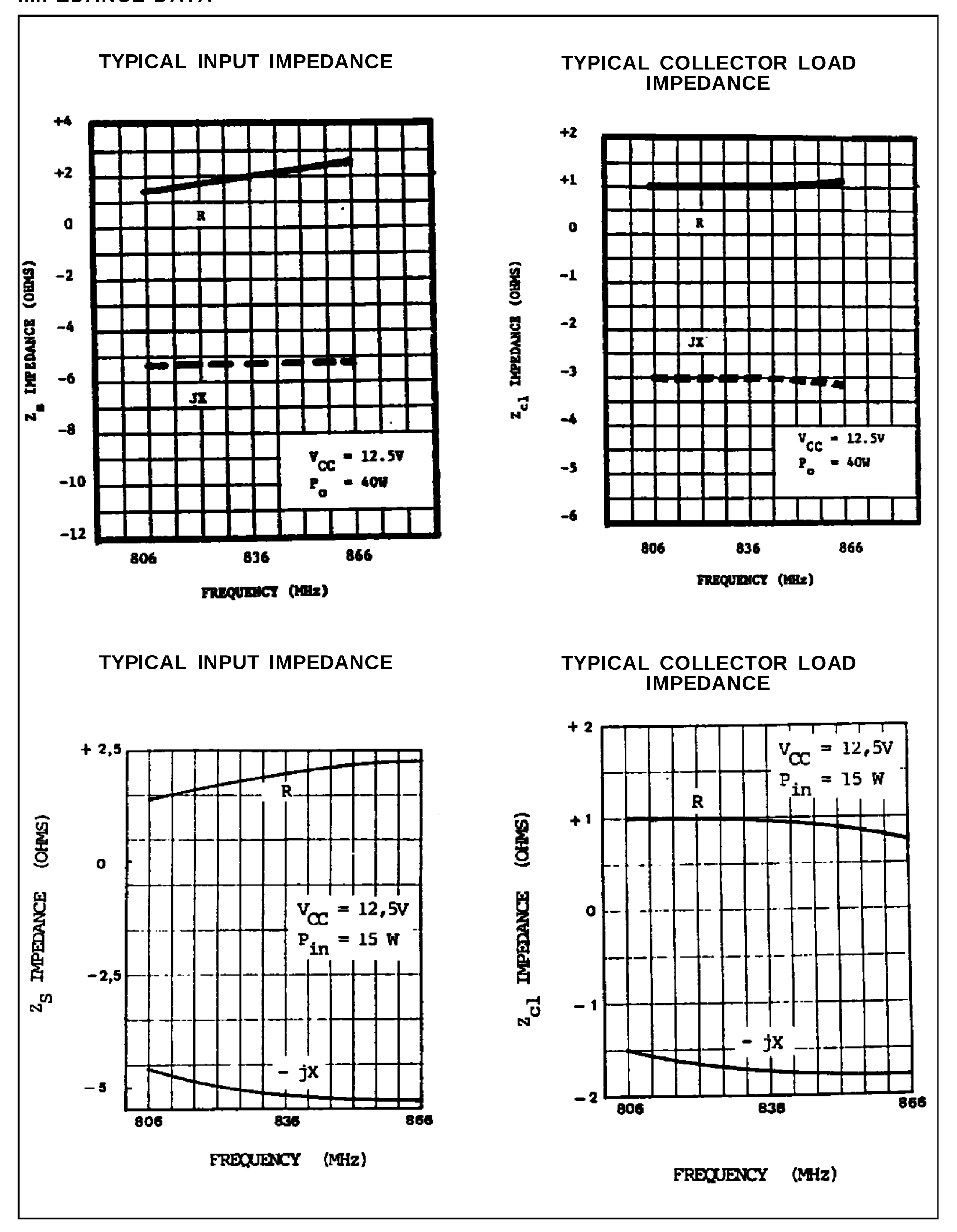
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	f = 836 MHz	P_{IN} = 15 W	V_{CE} = 12.5 V	45	—	—	W
G_P	f = 836 MHz	P_{IN} = 15 W	V_{CE} = 12.5 V	4.7	—	—	dB
C_{OB}	f = 1 MHz	V_{CB} = 12.5 V		—	80	—	pF

TYPICAL PERFORMANCE

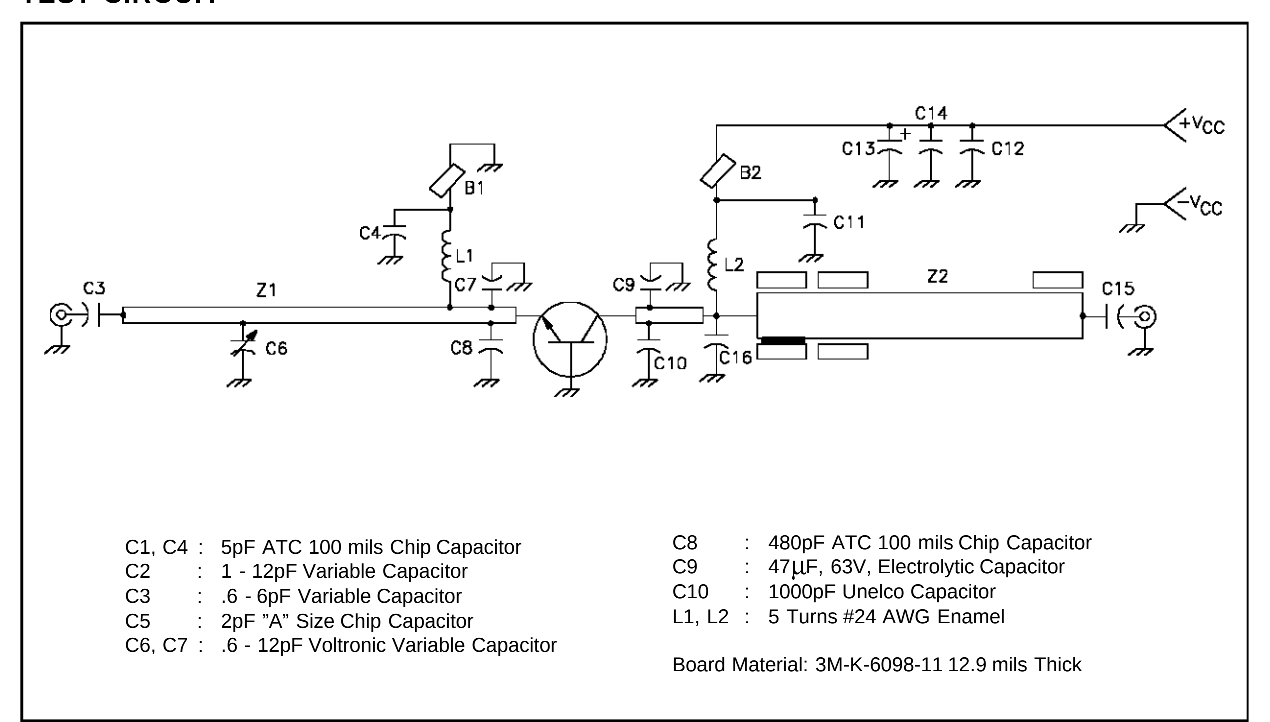
POWER OUTPUT vs FREQUENCY



IMPEDANCE DATA



TEST CIRCUIT



PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0142

SGS-THOMSON MICROELECTRONICS			CONT'D		
	MINIMUM Inches/mm	MAXIMUM Inches/mm		MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.355/9,02	.365/9,27	K	.160/4,06	.180/4,57
B	.115/2,92	.125/3,18	L	.230/5,84	.260/6,60
C	.075/1,91	.085/2,16			
D	.225/5,72	.235/5,97			
E	.090/2,29	.110/2,79			
F	.720/18,29	.730/18,54			
G	.970/24,64	.980/24,89			
H	.355/9,02	.365/9,27			
I	.004/0,10	.006/0,15			
J	.120/3,05	.130/3,30			

